

German Heavy Armor



PzKpfw I Ausf. B
Weight : 5.9 ton
Dimensions: 4.44 x 2.08 x 1.73 mt
Armor (max) : 35 mm
Range : 145 km
Speed (max - route) : 40 km/hr
Main gun : n.2 7.92 mm MG
Crew : 2

The little **Panzer I**, developed to be a training tank for the pre-war *Panzertruppen*, was pressed into actual combat use until at least 1942.

The *Panzer I* first saw action during the *Spanish Civil War (1936-38)* and in 1939 it was called upon to reinforce the tank units which invaded Poland and France in 1940. By 1941 the **Panzer Is** were withdrawn.



PzKpfw II Ausf. F
Weight : 9.5 ton
Dimensions: 4.81 x 2.28 x 2.02 mt
Armor (max) : 35 mm
Range : 190 km
Speed (max - route) : 40 km/hr
Main gun : 20 mm
MG : n. 1 7.92 mm
Crew : 3

The **Panzer II** was larger than its predecessor and armed with a gun (even though a small one). Likewise the *PzKpfw I* it was forced into action because of manufacturing delays which affected deliveries of *PzKpfw III and IVs*. As delays were prolonged by the war events, the **Panzer II** was still on production lines until 1943.

It was fast, reliable and was very useful during the German conquests of 1940-42. Its main combat drawback was a poor anti-tank performance (as said, it had a gun...but a very small one!). The **Panzer II**, following major redesigns, was adapted for many other roles (such as the self-propelled guns *Marder II* and the *Wespe*)



PzKpfw III Ausf. F

Weight : 19.8 ton

Dimensions: 5.38 x 2.91 x 2.44 mt

Armor (max) : 30 mm

Range : 165 km

Speed (max - route) : 40 km/hr

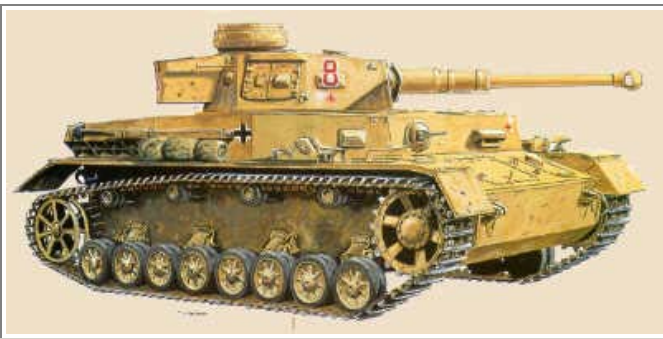
Main gun : 50 mm

Crew : 5

By 1935 the lessons learned with the *Panzer I and IIs* had provided the German industry with the confidence to produce a more ambitious combat tank. The original **PzKpfw III** design had a 37mm gun and two MG but was ready to mount a heavier gun. The main armament, starting from Ausf. E (1939), was increased to 50 mm gun and eventually to 75 mm (Ausf. N - 1943).

The **PzKpfw III** formed the bulk of the *Panzer Divisionen* during the early war years but suffered many manufacturing delays. When production ceased, in 1943, more than 13,500 had been produced (in a great number of variants and conversions).

One of the most important ones was the **Stug III** assault gun.



PzKpfw IV Ausf. F2

Weight : 23.6 ton

Dimensions: 5.93 x 2.88 x 2.68 mt

Armor (max) : 50 mm

Range : 200 km

Speed (max - route) : 40 km/hr

Main gun : 75 mm

Crew : 5

The **Panzer IV**, conceived by *General Guderian* himself as a heavy support tank for *Panzer IIIs*, was the workhorse of the *Panzer Divisionen*.

Although it was slow to come into production, the *Panzer IV* soon revealed its fine balance between protection, firepower, and mobility. When production ceased in 1945, more than 8,000 had been built (all 75 mm versions, short or long-barrelled ones).

It also provided the basis for many other combat vehicles, including : *Jagdpanzer IV* tank-hunter, *Nashorn* and *Hummel* self-propelled guns, and the *Flakpanzer IV* anti-aircraft tank .



PzKpfw V Ausf. G "Panther"

Weight : 45.5 ton

Dimensions: 8.86 x 3.40 x 2.98 mt

Armor (max) : 110 mm

Range : 200 km

Speed (max - route) : 46 km/hr

Main gun : 75 mm

Crew : 5

The **Panther** was the best German tank produced until 1945 and, tied with the *T-34/76 and /85*, can be considered the best medium tank of WWII .

It had a remarkable balance of protection, firepower, and mobility and was rushed into production in 1943 as a response to the Soviet *T-34*, whose main features (a powerful engine, wide tracks, a hard-hitting gun, and sloping armour) influenced the German engineers.

As soon as the first production problems, due to the hurry to get it into the battle, were solved, the **Panther** was developed into a magnificent *battle beast* which had, however, one main drawback : *there were never enough of them*. Between 1943 and 1945, about 5,500 were built.



PzKpfw VI "Tiger I" Weight :
57.0 ton

Dimensions: 8.45 x 3.70 x 2.93mt

Armor (max) : 100 mm

Range : 140 km

Speed (max - route) : 37 km/hr

Main gun : 88 mm

Crew : 5

The massive **Tiger I** dwarfed all previous German tanks. Conceived in 1937 as a heavy assault tank, it was actually developed from 1942.

Tigers saw their first actions around Leningrad and in Tunisia. Thereafter, they fought on all fronts until the end of the war.

They were slow and fuel consuming, but their heavy armour and powerful gun made them dangerous opponents for every Allied tank.

Between 1942 and 1945 some 1,350 were built.

The most remarkable *Tiger-derived* variants were : the *Jagdtiger* tank-hunter, the *Sturmtiger* a monster 380 mm breech-loaded mortar, and the *Elefant* assault gun



PzKpfw VI "Tiger II" Weight :
68.0 ton

Dimensions: 10.30 x 3.76 x 3.08 mt

Armor (max) : 180 mm

Range : 170 km

Speed (max - route) : 35 km/hr

Main gun : 88 mm

Crew : 5

The **Tiger II "Royal Tiger"** was the most powerful combat tank of World War II. Although its mobility was limited by its great weight and terrific fuel consumption, its long-range 88/71 gun as well as its oversized armour protection made it a real "nightmare" for its opponents

The "**Royal Tiger**" saw first action in Normandy (June 1944), and was later deployed during the *Battle of the Bulge*. Production was slow, due to Allied bombing or to raw materials shortages. By the end of the war only 489 had been built.

Panzerkampfwagen VI Ausf. B (Sd Kfz 182)

Other designations: Tiger II, Königstiger, VK4503



Manufacturer: Henschel
Chassis no.280001-280489
489 produced from January 1944 to March 1945

Crew:	5	Engine:	Maybach HL230P30
Weight (tons) :	68	Gearbox:	8 fwd / 4 rev.
Length (m) :	10.3	Speed (kph) :	35
Width (m) :	3.76	Range (km) :	170
Height (m) :	3.08	Radio :	FuG5

Armament	88mm KwK43 L/71	coaxial 7.92mm MG34	7.92mm MG34
Traverse	360° (hydraulic)	-	hand
Elevation	-7.4° +15°	-	-8° +17°
Sight	TZF9b, later TZF9d	-	KgZF2
Ammunition	72 Pz gr & Sp gr	5850 rounds (total)	



	(AP & HEAT rounds respectively)		
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Armor (mm/angle)	Front	Side	Rear	Top/Bottom
Turret (Henschel)	180/9°	80/21°	80/21°	40/78° -90°
Superstructure	150/50°	80/25°	n/a	40/90°
Hull	100/50°	80/0°	80/30°	40-25/90°
Gun Mantlet	100/Saukopfblende			

History: in January 1943, a new Tiger was ordered which was to have a turret large enough to mount the 8.8 cm L/71 gun, since this had not been achieved with the Tiger I. Frontal armor thickness was to be increased to 150mm but the side armour was to remain at 80mm A wooden mock-up showing the immense size of the vehicle was displayed on 2 October 1943. The turret chosen to mount the long 8.8 cm gun was designed by Porsche, with curved front plate. On 6 December 1943 the shot-trap, formed by the curved front of the turret, was ordered to be eliminated. This was achieved by redesigning the turret and gun mantlet in such a manner as to decrease the frontal area.

Specific features The Tiger II had a hull similar in design to Panther series. The frontal armor was well sloped to increase protection The suspension consisted of nine sets of interlaced road wheels sprung on torsion bars. The first fifty Tiger II had the turret with the curved front plate designed by Porsche for his VK4502, Project 180 The remainder had the newly-designed turret. From November 1944, a proportion of Tiger II were converted to Command tanks by the installation of additional radio sets, at the expense of ammunition stowage. The designation of these was Pz Bef Wg mit 8.8 cm KwK43 L/71

Combat service: The first Tiger II were issued to training units in February and May 1944 The first deliveries to combat units did not take place until June 1944, five months after production had started. Apart from five issued to the Feldherrnhale division in March 1945, all Tiger II saw service with independent schwere Panzer abteilungen of the Army and the SS. The Tiger II eliminated its opponents with ease, on both Eastern and Western fronts, but insufficient were produced to arrest the flood of enemy armor.

Königstiger No. 121 is at the German Army Panzer Museum at Munster; No. 332 was captured at Coe-Biester near La Gleize during the Ardennes Offensive and is now in the Patton Museum of Cavalry and Armor at Fort Knox, Kentucky; and No. 104 was captured by the British and is in the Shrivenham Museum, England.



A line up of Königstiger, first battalion to receive them



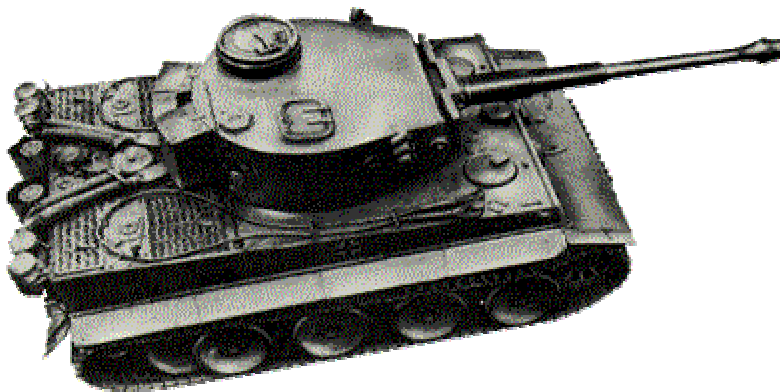
Königstiger in Budapest, Hungary



American POW's passing Tiger II of Kampfgruppe Peiper.
Ardennes Dec'44

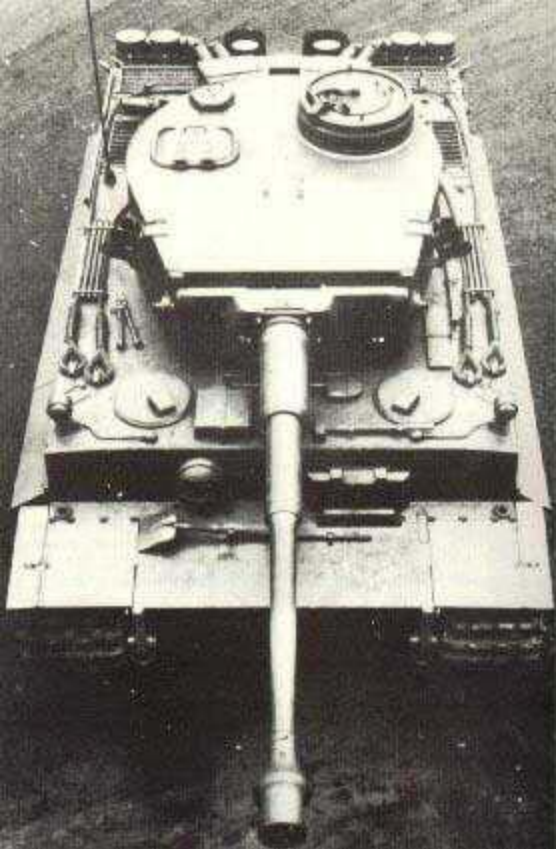
Panzerkampfwagen VI Ausf. E (Sd Kfz 181)

Other designations: Tiger I, VK4501(H)



Manufacturer: Henschel, Wegmann
Chassis no.250001-251357
1,354 produced from July 1942 to August 1944

Crew:	5	Engine:	Maybach HL210P45
Weight (tons) :	57	Gearbox:	8 fwd / 4 rev.



Length (m) :	8.45	Speed (kph) :	38
Width (m) :	3.7	Range (km) :	140
Height (m) :	2.93	Radio :	FuG5

Armament	88mm KwK36 L/56	coaxial 7.92mm MG34	7.92mm MG34
Traverse	360° (hydraulic)	-	15° left/right
Elevation	-9° +10°	-	-7° +20°
Sight	TZF9b, later TZF9c	-	KgZF2
Ammunition	92 Pz gr +	4800 rounds (total)	

Armor (mm/angle)	Front	Side	Rear	Top/Bottom
Turret	100/8°	80/0°	80/0°	25/81° -90°
Superstructure	100/10°	80/0°	n/a	25/90°
Hull	100/24°	60/0°	80/8°	25/90°
Gun Mantlet	100-110/0°			

History: The order to design VK4501(H) was issued on 26 May 1941. Henschel und Sohn, of Kassel, were to develop the chassis, while Krupp was to develop the turret. Lessons learned during early heavy tank development were befciently applied to the design of VK4501(H). Production was planned to start in July 1942, with 285 to be completed by 12 May 1943, in time for the summer offensive.

Specific features: Tiger I had eight sets of interleaved road wheels with torsion bar suspension to support its 57 tons weight. The hull and superstructure were welded together, with superstructure extended over the tracks to allow installation of a wide turret. The 8.8cm KwK36 was mounted coaxially with a MG34 in the external gun mantlet. The turret was formed from a plate bent to the shape of a horseshoe. Originally,

the turret had two machine-pistol ports in the rear, and a cylindrical cupola with vision slits. In December 1942, the right-hand pistol port was replaced by an escape hatch, and in July 1943, the cupola was replaced by a newer design with periscopes. In May 1943, the automotive performance was improved by the installation of the HL230P30, and in January 1944, new steel-tyred, rubbercushioned road wheels replaced the dished type. Eighty-four Tiger I were equipped as 'Pz Bef Wg mit 8.8cm KwK L/56'. These had additional radio sets, which reduced ammunition stowage to 66 rounds for the 8.8cm and 4,050 Patr for the machine-guns.

Combat service: The first unit to be equipped with Tigers was the 1st Platoon of the 502nd schwere Panzerabteilung which was hurriedly assembled and rushed to the Leningrad area in August 1942. The Tiger I was issued to Army independent heavy tank detachments and heavy tank companies of three SS divisions, and to the Grossdeutschland Division. Still in service at the end of the war, the Tiger I had taken a heavy toll of enemy armour on all fronts.



Tiger I in Tunisia, 1943



Tiger I with its victim, the Russian 'Mickey Mouse' T-34

38cm RW61 auf Sturmörser Tiger

Other designations: Tiger-Mörser, SturmTiger



Manufacturer: Alkett

Crew:	5	Engine:	Maybach HL230P45
Weight (tons) :	65	Gearbox:	8 fwd / 4 rev.

Length (m) :	6.28	Speed (kph) :	40
Width (m) :	3.57	Range (km) :	120
Height (m) :	2.85	Radio :	FuG5

Armament	38cm Stu M RW61	7.92mm MG34
Traverse	10° left/right (hand)	15° left/right (hand)
Elevation	-0° +85°	-7° +20°
Sight	PaK ZF3 x 8	KgZF2
Ammunition	14	600

Armor (mm/angle)	Front	Side	Rear	Top/Bottom
Superstructure	150/45°	80/30+0°	80/0°	40-25/90°
Hull	100/25°	60/0°	80/9°	25/90°





History: On 5 August 1943, a self-propelled vehicle was proposed, based on the Tiger I chassis, but mounting a 38cm mortar. Alkett was in charge of the design and had completed a prototype by 20 October 1943, when it was run through its paces for approval. Brandenburger Eisenwerke produced the superstructures and Alkett converted the Tiger I and completed the Sturmmorser at their Berlin-Spandau plant.

Specific Features: The hull and suspension remained unchanged from the Tiger I. The superstructure front was cut down and a larger box superstructure housing the 38cm mortar was fitted. The large mortar was an unusual design which fired rocket-assisted ammunition and had vents in the gun tube wall to exhaust the propellant gases. The range of the RW61 was 4,600m.

Combat service : The Sturmmorser were issued to Sturmmorser Kompanie 1001, 1002 and 1003, and were employed mainly in the defence of the German Fatherland

Jagdtiger (Sd Kfz 186)

Other designations: Jagdpanzer VI



Manufacturer: Nibelungenwerke

Chassis no.305001-305077

77 produced from July 1944 to March 1945

Crew:	6	Engine:	Maybach HL230P30
Weight (tons) :	70	Gearbox:	8 fwd / 4 rev.
Length (m) :	10.65	Speed (kph) :	38
Width (m) :	3.63	Range (km) :	170
Height (m) :	2.95	Radio :	FuG5

Armament	128mm PaK44 L/55	7.92mm MG34	7.92mm MG34
Traverse	10° left/right (hand)	hand	loose
Elevation	-7.5° +15°	-8° +17°	loose
Sight	WZF2/7	KgZF2	direct
Ammunition	40 Pz gr & Sp gr	1500 rounds (total)	

Armor (mm/angle)	Front	Side	Rear	Top/Bottom
Superstructure	250/15°	80/25°	80/5°	40/85°
Hull (upper)	150/50°			40/90°

Hull (lower)	100/50°	80/0°	80/30°	40-25/90°
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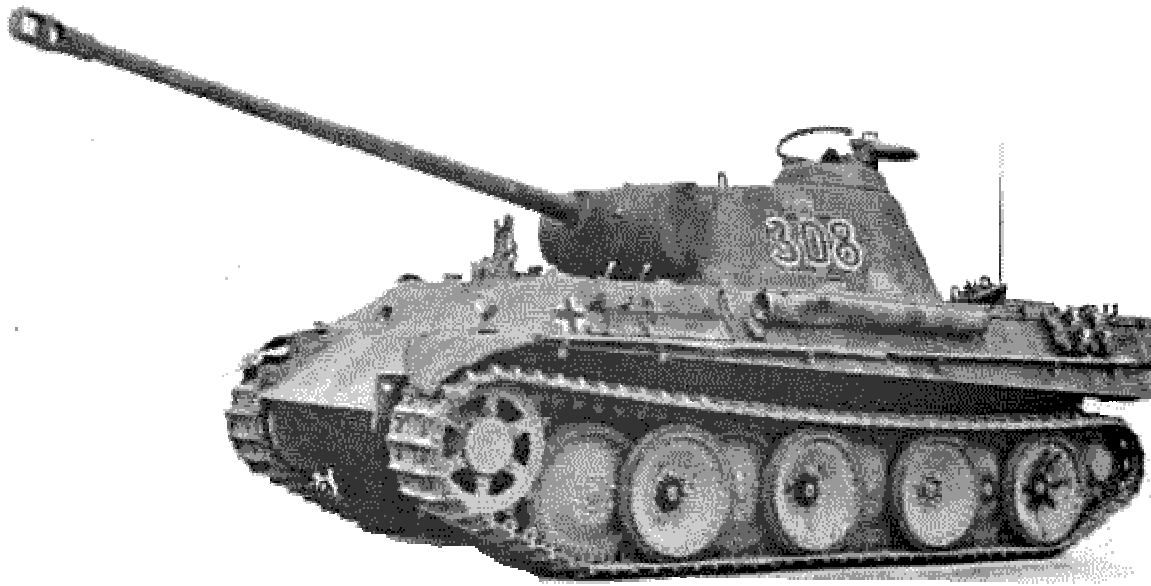
History: Early in 1943, orders were given to design a heavy, selfpropelled anti- tank guns by mounting the 12.8cm gun on a Tiger II chassis. A wooden model of the enormous vehicle was displayed on 20 October 1943, and the finished prototype, in April 1944. Two Jagdtiger (Nos. 305001 and 305004) were built with the Porsche-designed longitudinal torsion-bar suspension. This proved unsatisfactory and delayed production until the Jagdtiger had been redesigned with a torsion-bar suspension. The initial series was for 150, but an order issued in October 1944 stipulated that when these had been completed, production capacity was to be used for building the Panther. However, this was reversed in January 1945, with an order to continue the assembly of Jagdtiger as fast as possible. A Jagdtiger mounting the 8.8cm L/71 was designated Sd Kfz 185, but this never went into production.

Specific Features: The Jagdtiger had the same suspension as the Tiger II, but its hull was lengthened. The superstructure had a very box-like appearance, with the sides being formed by the continuation of the upper hull sides. The hull machine-gun mount was retained in the hull front, as secondary armament to the 12.8cm PaK44, mounted in the superstructure front.

Combat Service: The Jagdtiger was issued to only two combat units, Panzerjagerabteilung 653 and schwere Panzerabteilung 512. The 653rd was employed on the Western Front during the Ardennes offensive, and later with the 512th in the defence of Germany proper, in such actions as that of the Remagen Bridgehead on 10 March 1945.

Panzerkampfwagen V Ausf G (Sd Kfz 171)

Other designations: Panther I, VK3002



Panther Ausf. G

Ausf D

Manufacturer: MAN, Daimler-Benz, MNH, Henschel
Chassis no. 210001-210254, 211001-214000
850 produced from January to September 1943

Ausf A

Manufacturer: MAN, Daimler-Benz, MNH, Demag
Chassis no. 151001-160000, 210254-211000
2000 produced from August 1943 to May 1944

Ausf G

Manufacturer: MAN, Daimler-Benz, MNH
 Chassis no. 120301-, 124301-, 214001-
 3126 produced from March 1944 to April 1945



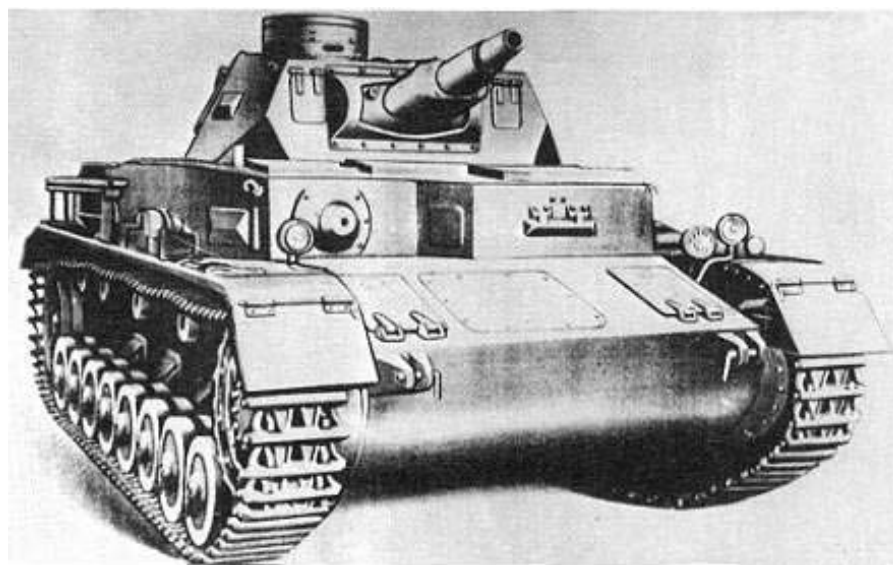
Technical Detail (for Ausf. G only)

Crew:	5	Engine:	Maybach HL230P30
Weight (tons) :	45.5	Gearbox:	7 fwd / 1 rev.
Length (m) :	8.86	Speed (kph) :	46
Width (m) :	3.4	Range (km) :	200
Height (m) :	2.98	Radio :	FuG5

Armament	75mm KwK42 L/70	coaxial 7.92mm MG34	7.92mm MG34
Traverse	360° (hydraulic)	-	5° left/right (hand)
Elevation	-8° +18°	-	-10° +15°
Sight	TZF12a	-	KgZF2
Ammunition	81	4800 rounds (total)	



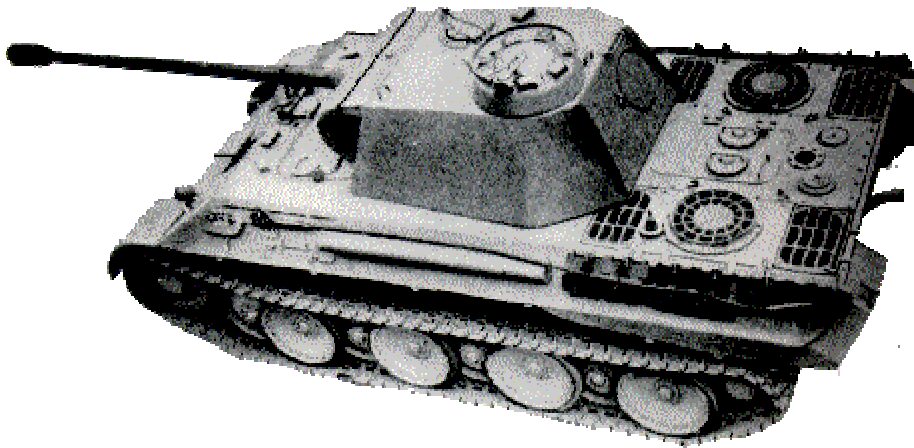
Armor (mm/angle)	Front	Side	Rear	Top/Bottom
Turret	110/11°	45/25°	45/25°	16/84° -90°
Hull (upper)	80/55°	50/30°	n/a	40 & 16/90°
Hull (lower)	60/55°	40/0°	40/30°	30-16/90°
Gun Mantlet	100/rounded			



History (ausf. G): The Ausf G was the third series of the Panther. Many design changes were made with this model, brought about by recommendations from the troops in the field manning the Ausf D and A.

Specific features (ausf. G): The major external difference between the Panther Ausf G and the earlier Ausf A and Ausf D was the redesigned hull. Side armor was increased on the upper hull side, and the side plate was now a single piece. The driver's vision port was removed from the front plate to increase strength. Vision was now provided through a rotating periscope, and the driver's seat could be raised and the controls extended so that he could drive with his head out of the hatch. The pivoting hatches over the driver and radio operator were replaced by hinged versions. Suspension remained much the same as before, but on late production vehicles, the rear most damper was deleted. A trial production series in September 1944 featured the steel-rimmed 'silent bloc' wheels that were to be standardized on the Ausf F in 1945. Many minor changes were made to improve reliability during the production run, especially to the drive-train. A gearbox oil cooler was fitted. 3mm armored ammunition bins were installed for the first-time. Later production vehicles were equipped with a fighting compartment heater system which drew warm air from a tower- like device fitted over the left side engine fan. Effective flame-trap exhaust mufflers were introduced. In late 1944, a proportion of the turrets delivered were fitted with a new gun mantles on which the under curve was eliminated (by a forward angled projection) to prevent downward deflection of hits through the thin hull roof armor.

Combat service (ausf. D): Production of the Ausf D began in January 1943, and the first vehicles were issued during the following month. In April 1943, all issue was halted, and those that had been issued were recalled for major modifications. Finally, in May 1943, the 51st and 52nd Panzerabteilungen received the Panthers which were the first to go in Kursk, July 1943. Most ausf. D were issued to these two units, plus 23rd and 26th independent Panzer Regiments, and the Panzer Regiments within Leibstandarte and Das Reich Panzer Divisions



Combat service (ausf. A, above): When the Panther Ausf A was first introduced, it saw service in Russia and Italy. Most of the Panther detachments deployed to meet the Allied invasion of France in mid 1944 were equipped with Panther Ausf A, and many of them were still in service at the end of the war.

Combat service (ausf. G): The Ausf G saw action on eastern, south-eastern and western fronts until the end of the war. It generally comprised over half the tank strength of the Panzer divisions, making itself felt in the last offensives in East Prussia, Hungary and Belgium. Approximately 450 Panthers were available with units under Army Group B at the start of the Ardennes offensive.





Panthers of the 5. SS Panzerdivision *Wiking*

Jagdpanther (Sd Kfz 173)

**Other designations: Panzerjäger für 8.8cm
PaK43 auf Fgst Panther I**



Manufacturer: MIAG, MNH
Chassis no. 300001-300392
392 produced from January 1944 to March 1945

Crew:	5	Engine:	Maybach HL230P30
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Weight (tons) :	46	Gearbox:	7 fwd / 1 rev.
Length (m) :	9.9	Speed (kph) :	46 (really?)
Width (m) :	3.42	Range (km) :	140
Height (m) :	2.72	Radio :	FuG5+FuG2

Armament	88mm KwK43 L/71	7.92mm MG34
Traverse	13° left/right (hand)	5° left/right (hand)
Elevation	-8° +14°	-10° +15°
Sight	SflZF5	KgZF2
Ammunition	57	600

Armor (mm/angle)	Front	Side	Rear	Top/Bottom
Superstructure	80/55°	50/30°	40/35°	25/83° +16/90°
Hull	60/55°	40/0°	40/25°	25-16/90°
Gun Mantlet	100/Saukopfblende			



History: On 2 October 1942, the order was issued to develop a heavy assault gun by using the long 8.8cm Pak L/71 mounted on the Panther chassis. A wooden mock-up was completed by October 1943, and the prototype was shown to Hitler on 16 December 1943. Production started at MIAG in January 1944, and at MNH in November 1944, and continued until March 1945. Originally, there were two designations listed, the above and 'Sturmgeschütz für 8.8cm StuK43 auf Fgst Panther I (Sd Kfz 172)', but no further record of this model has been located.

Specific features: The fighting compartment was designed by extending the upper hull and side plates of the normal Panther chassis. The 8.8cm PaK43/3 was installed in a gun mount in this sloping front plate. Earlier production vehicles had the gun mount welded to the superstructure front plate; later production vehicles had a protruding gun mount which was bolted in place. The driver was provided with a periscope in the front superstructure next to the gun mount, while all other crew vision was by periscopes mounted in the superstructure roof. Close defence was provided by a 'Nahverteidigungsgerat' (close-defence weapon) mounted in the superstructure roof, and a machine-gun in a hull mount in the superstructure front. The suspension was unchanged from that installed on the Panther, but the drivetrain was improved by the installation of a heavy-duty transmission.

Combat service: The first Jagdpanthers were issued to the 559th and 654th Panzerjägerabteilungen in June 1944. Only the latter unit only a company strength of from ten to fourteen Jagdpanthers. The largest collection of Jagdpanthers built during the war were assembled in December 1944 to participate in the Ardennes offensive. From January 1945 until the end of the war, they were also issued to the tank detachments of seven different Panzer divisions, to The Führer Grenadier Division and to a Panzer brigade